THREE-PHASE ISOLATED VECTOR SWITCHING AC TO AC FREQUENCY CONVERTERS

ABSTRACT

A three-phase AC to AC frequency converter has a transformer with a three-phase input and n sets of three-phase secondary outputs, where n is three or more, the voltages at each set of secondary output terminals being one or more multiples of 360°/n out of phase with the voltages at the other sets of secondary output terminals. The sets of secondary output terminals are connected to three single pole, n throw switches, the poles of which are connected to the three output terminals of the frequency converter. Each switch may have n semiconductor switching devices, each connected to the common pole and separately connected to one of the output terminals in each of the sets of secondary output terminals. The three switches are controlled to switch to provide the three-phase voltage from one of the four sets of secondary output terminals at a time to the output terminals of the frequency converter, with the frequency and duty ratio of the switching selected to provide a desired output frequency at the output terminals.